

CLAIMS

1. A method of inventorying logical volumes in a computer storage system, the computer storage system comprising a plurality of storage elements coupled together with a communication network, the method comprising steps of:

for each of a plurality of logical volumes, maintaining identifying information for each user of the respective logical volume; and

for each of the plurality of logical volumes, verifying that the logical volume is still in use.

10 2. The method of claim 1, wherein the verifying step comprises a step of performing verification for each of the logical volumes stored in the computer storage system as a discrete, continuous process.

15 3. The method of claim 1, wherein the verifying step comprises a step of performing verification for each of the plurality of logical volumes located on one of the storage elements as a discrete, continuous process.

20 4. The method of claim 1, wherein the verifying step comprises a step of performing verification for each of the plurality of logical volumes accessed by one of the users, coupled to the communication network, as a discrete, continuous process.

25 5. The method of claim 1, wherein at least one of the users is a host computer.

6. The method of claim 1, wherein at least one of the users is an account on a host computer.

30 7. The method of claim 1, wherein at least one of the users is an application running on a host computer.

8. The method of claim 1, wherein the logical volume is a hyper-volume.

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9. The method of claim 1, wherein the logical volume is a component of a conventional logical volume.

10. The method of claim 1, wherein the logical volume is a partition.

11. The method of claim 1, wherein the step of maintaining is performed by a storage management console computer.

12. The method of claim 1, wherein the step of maintaining comprises a step of maintaining identifying information for each user of the respective logical volume on the respective storage element on which the logical volume is stored.

13. The method of claim 1, wherein the step of maintaining comprises a step of maintaining identifying information for each user of the respective logical volume on a storage management console computer.

14. The method of claim 1, further comprising a step of assigning an ELVID to each logical volume.

15. The method of claim 1, wherein the verifying step comprises steps of:  
identifying at least one of a plurality of host computers, the identified host computers having accessed one of the logical volumes; and  
querying each of the identified of host computers about whether the logical volume is still in use.

16. A storage element, comprising:  
a storage medium to store logical volumes;  
an access manager module configured to maintain identifying information for each user of the logical volumes stored on the storage medium; and  
a verifier module, coupled to the access manager module, to perform verification that a logical volume is still in use.

17. The storage element of claim 16, further comprising:



an ELVID database manager module.

27. The storage management facility of claim 16, further comprising:  
an ELVID verification module.

28. A method of detecting when one of a plurality of logical volumes, each logical volume being stored on one of a plurality of storage elements in a computer storage system, no longer needs to be stored on its respective storage element, the method comprising steps of:

tracking accesses to the logical volumes;  
automatically identifying one of the logical volumes that has not been accessed for a predetermined period; and  
determining whether the identified logical volume still requires storage on its respective storage element.

29. The method of claim 28, wherein the determining step comprises a step of querying users which have accessed the identified logical volume.

30. The method of claim 28, further comprising a step of moving the identified logical volume to a secondary storage element.

31. The method of claim 28, wherein the step of tracking is performed by a storage management console for the plurality of storage elements.

32. The method of claim 28, wherein the step of tracking is performed by the storage elements.

33. The method of claim 32, wherein the step of determining is performed by a storage management console for the plurality of storage elements.

34. The method of claim 28, wherein the tracking step comprises a step of tracking accesses identified using an ELVID.

35. The method of claim 28, further comprising a step of maintaining a database of logical volumes and users that may access the corresponding logical volumes.

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36. The method of claim 35, wherein the step of maintaining comprises a step of specifying logical volumes using ELVIDs.

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